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A NEW SPECIES OF *ASTER* (ASTERACEAE: ASTEREAE) FROM MÉXICO

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ABSTRACT

A new species of *Aster*, **A. hintonii**, is proposed from Guerrero, México. A key separates five closely related Mexican species centered around *A. oblongifolius* of subg. *Virgulus*, including *A. moranensis*, to which *A. hintonii* is most closely related.

KEY WORDS: *Aster*, Asteraceae, Astereae, México.

Study of collections of Mexican *Aster* has revealed a previously undescribed species.

Aster hintonii Nesom, *spec. nov.* TYPE: MÉXICO. Guerrero: Distr. Mina, Aguazarca Filo, oak forest, 21 Dec 1937, *Hinton, et al. 11316* (HOLOTYPE: LL!).

Aster moranensi Kunth similis vestimento eglanduloso, caulibus strictis pauci-ramosis capitulis solitariis, foliis oblongis, phyllariis valde imbricatis, et corollis radii albidis sed differt vestimento dense hirsuti-piloso et pappo setorum rubiginosorum.

Plants 4-8 dm tall, a "shrub" according to paratype label; base not seen. Stems strictly erect, with a few, stiffly ascending branches near the top, densely hispid pilose with thick based, sharply attenuated, curving and slightly crisped trichomes, eglandular. Lower leaves oblong-obovate, 25-32 mm long, 8-11 mm wide, entire, epetiolate, not clasping, strigose-hirsute on both surfaces, oblong above, slightly reduced in size upwards, 12-18 mm long at midstem, spreading-ascending, very evenly distributed, continuing to immediately below the heads. Heads solitary, hemispheric, 10-14 mm wide (pressed); phyllaries strongly graduated in 6-8 series, narrowly oblong-oblanceolate, apiculate, with a sharply delimited, herbaceous apical patch, short hirsute, white indurated with narrow, hyaline margins below the apex, the innermost 8-9 mm long, with erect, deltate-triangular apices, the outer 1/3-1/2 as long, with rounded, spreading apices. Ray flowers 25-30 in 1 series, the corollas white, 8-10 mm long, the ligules ca 1.0 mm wide, coiling. Disc flowers narrowly

obcuneate-oblanceolate, 4.9-5.2 mm long, the upper half sparsely strigose, the lobes triangular-deltate, 0.8 mm long; style branches with narrowly triangular collecting appendages 0.5 mm long. Achenes densely strigose, mature size not observed; pappus of 28-31 dull reddish, barbellate bristles.

Additional collection examined: MÉXICO. Guerrero: Distr. Galeana, Teotepec, pine and oak forest, 2200 m, 26 Dec 1937, *Hinton, et al. 11148* (LL).

Aster hintonii is similar and apparently most closely related to the more widespread *A. moranensis* in its eglandular vestiture, strictly erect, few branched stems with solitary heads and even sized, evenly distributed leaves, strongly graduated, apiculate phyllaries, and white ray corollas (the geographically restricted *A. moranensis* var. *turneri* Sundberg & Jones has blue corollas). The new species is different in its densely hirsute-pilose (vs sparse and appressed to glabrous) vestiture and its distinctly reddish (vs white) pappus bristles. *Aster hintonii* apparently occupies a small area to the southwest of, and allopatric with, *A. moranensis*. The two collections were made from localities more than 100 kilometers apart.

To further clarify the identity of *Aster hintonii* and taxa closely related to it, the following key is presented to five similar species of the "*A. oblongifolius*" group, all of which occur in México and are members of *Aster* subg. *Virgulus* (Rafin.) A. Jones. The only other members of subg. *Virgulus* in México are *A. falcatus* Lindl. and *A. ericoides* L., which constitute sect. *Multiflori* (A. Gray) R.A. Nelson (Jones 1980a) and *A. fendleri* A. Gray, which is more peripherally related to the *A. oblongifolius* group. The following species have sessile, oblong, subclasping, 3 nerved, and evenly distributed leaves, mostly solitary heads on few branched or unbranched stems, and multi-nerved achenes.

1. Plants eglandular; stems densely leafy bracteate immediately below the heads; ray corollas white .....(4)

1. Upper stems, leaves and phyllaries (or sometimes only the phyllaries) prominently stipitate glandular; stems sparsely leafy bracteate immediately below the heads; ray corollas white or blue .....(2)

2. Plants rhizomatous; inner phyllaries nearly completely hyaline scarious, without an apical herbaceous patch; rays blue; south central Nuevo León .....*A. gypsophilus* B. Turner

2. Plants rhizomatous or cormose; innermost to the outer phyllaries with an apical herbaceous patch, indurated scarious below; rays white or blue .....(3)

3. Plants from slender rhizomes, these sometimes thickening, but without a corm; rays blue; northern Coahuila, eastern New Mexico, Texas and widespread in the eastern United States .....*A. oblongifolius* Nutt.

3. Plants from a thick corm, not rhizomatous; rays white; sierra of Nuevo León and Tamaulipas through Hidalgo, México and Puebla, to Chiapas and Guatemala .... *A. trilineatus* Schultz-Bip. *ex* Klatt

4. Stems sparsely appressed strigose to glabrous; pappus bristles whitish; ray corollas white (blue in var. *turneri*); southern Durango, Jalisco and Michoacán through northern Guerrero to Veracruz, south to Oaxaca .... *A. moranensis* Kunth

4. Stems densely hirsute pilose; pappus bristles distinctly dull reddish; rays corollas white; west central Guerrero .... *A. hintonii*

Aster moranensis (including *A. lima* Lindl.) and *A. trilineatus* (the latter as *A. bimater* Standl. & Steyerm.) were included by Almut Jones (1980a) in sect. *Patentes* Torr. & A. Gray, but they are clearly very similar and closely related to *A. oblongifolius*, the type of sect. *Oblongifolii* (Rydb.) A. Jones. Ronald Jones (1983) did not include *A. moranensis* or *A. trilineatus* in his strict concept of sect. *Patentes*.

Semple & Brouillet (1980a) treated the species of both of the *Patentes* and *Oblongifolii* subgroups (*sensu* A. Jones), along with other species, as an enlarged sect. *Grandiflorae* (Torr. & A. Gray) Semple & Brouillet of the genus *Lasallea*. *Aster grandiflorus* L. appears to differ most significantly from the *A. oblongifolius* group only in its stems with spreading branches, and these species should be treated as part of the same taxonomic unit. I further agree with Semple & Brouillet that [subgenus] *Virgulus* is best viewed as comprising three sections: 1) sect. *Multiflori* (A. Gray) R.A. Nelson, with *A. ericoides* and *A. falcatus*; 2) sect. *Concolores* Torr. & A. Gray, with *A. concolor* L. and *A. sericeus* Vent.; and 3) sect. *Grandiflori* Torr. & A. Gray, with the remainder, a large (ca 15-16 species) and morphologically variable and intergrading group, including, for example, *A. grandiflorus, A. oblongifolius, A. patens* Ait., *A. novae-angliae* L. and *A. carolinianus* Walt.

The reported chromosome number for *Aster gypsophilus* of $n = 9$ pairs (Turner 1974) is somewhat anomalous in subg. *Virgulus*, which mostly has $x = 5$. *Aster gypsophilus*, however, is almost certainly most closely related to the species centered around *A. oblongifolius* and is particularly similar to both *A. trilineatus* and *A. oblongifolius* in its glandular vestiture. Further, the phyletic interpretation of chromosome numbers in subgenus *Virgulus* is tempered by the discovery that *A. carolinianus* also has a chromosome number of $n = 9$ pairs (Jones 1985, and confirmed by Scott Sundberg in several unpublished counts) and that *A. concolor* has $n = 4$ and 8 pairs (Jones 1980b; Semple & Brouillet 1980b).

Whatever the formal taxonomy, the group comprising *Aster oblongifolius* and closely related species with solitary heads is the only subgroup of the genus *Aster* (as presently recognized) to have radiated primarily in México.

Machaeranthera sect. *Psilactis* (A. Gray) B. Turner & Horne, however, which appears to be closely related to *Aster* but whose taxonomic position has not yet been clarified, also is primarily endemic to México.

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LITERATURE CITED

Jones, A.G. 1980a. A classification of the New World species of *Aster* (Asteraceae). Brittonia 32:230-239.

_____. 1980b. Data on chromosome numbers in *Aster* (Asteraceae), with comments on the status and relationships of certain North American species. Brittonia 32:240-261.

_____. 1985. Chromosomal features as generic criteria in the Astereae. Taxon 34:44-54.

Jones, R.L. 1983. A systematic study of *Aster* sect. *Patentes* (Asteraceae). Sida 10:41-81.

Semple, J.C. & L. Brouillet. 1980a. A synopsis of North American asters: the subgenera, sections and subsections of *Aster* and *Lasallea*. Amer. J. Bot. 67:1010-1026.

_____. 1980b. Chromosome numbers and satellite chromosome morphology in *Aster* and *Lasallea*. Amer. J. Bot. 67:1027-1039.

Turner, B.L. 1974. *Aster gypsophila* (Compositae), a new endemic gypsophile from north-central Mexico. Southw. Nat. 19:123-125.